UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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Send all comments, criticisms and contributions to the editor: T. W. Lanzatella, University Computer Center, 2520 Broadway Drive, Lauderdale, MN 55113.
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NOTICE OF CHANGES TO THE SYSTEM

Bill Sackett changed performance measurement statistics (PMS) gathering in a minor way. One statistic gathered is the number of rollouts performed by the system and the reason for each rollout. We have only a limited amount of space to keep rollout-reason counts. In fact, there are more rollout-reasons than space for counters. One rollout-reason we were keeping track of is the number of times jobs were rolled out because of SRU or time limits. Bill replaced this count with a count of how many times jobs are rolled out because a request for additional memory was not granted.

Jeff Drummond changed all the places in the system which refer to his bin number. This change was instigated by the recent reorganization of bins at Lauderdale.

Paul Thompson corrected SC register processing in 1MB to check whether an SC register exists before processing its contents. This is important for the Cyber 74 since it does not have an SCR. Paul also changed ENQUIRE in order to correct a very confusing problem. The problem starts with the E,JN command. Whenever this command is entered, ENQUIRE searches the EFNT looking for job names which match in the first four characters with the job name of the job which issued the command. When a job is submitted from the MERITSS system to MIRFE, the job gets a job name based

on the user index of the submitting user on MERITSS. Because user indices are not unique between MERITSS and MIRJE, it is possible for user X on MERITSS to have the same user index as user Y on MIRJE and hence the same user index hash. Thus, if user X submits a job to MIRJE (from MERITSS) and user Y issues an E,JN command, he sees user X's job even though user Y's job is running under a user number different from user X's. The solution to this problem, which Paul implemented, is to change ENQUIRE to search the EFNT not for matching job names but for matching user indices. The user index in the EFNT corresponds to the user number under which the job is actually running.

Andy Hastings reinstalled 76 PSR modsets from CDC according to a new naming convention (see DSN 7,1 P. 2).

PROPOSED CHANGES TO THE SYSTEM

The Game of the Name is the Game - by J. J. Drummond

I propose that we implement the computer system naming scheme presented in my discussion topic "The Name of the Game is the Name" (DSN, Vol. 7, No. 6). The specific names that I suggest are as follows:

Class VI computer system:	Jupiter
Cyber 172 (soon to be Cyber 730):	Saturn
Cyber 74:	Uranus
Cyber 720 (soon to be Cyber 172):	Neptune

with additional computer systems (VAX's) to be named at a later date.

As indicated in the discussion topic, this will entail changes to the MI parameter on ROUTE, SEND and the job card (space in OVJ permitting) as well as a reworded system title line. In addition, Kevin Matthews suggested that the family names (see the proposal "TELEX LOGIN CHANGES," DSN Vol. 7, No. 5) should match the system names.

All references to machine ID will, as part of this proposal, be changed to reference the new system name.

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Change CCL GET to ACQUIRE - by S. E. Collins

If the BEGIN control statement is used and PROCFIL is not a local file, CCL will automatically attempt to GET PROCFIL. However, if PROCFIL is a direct access file, the GET fails and CCL aborts. I propose changing CCL to use ACQUIRE to obtain the procedure file; it will then obtain PROCFIL whether it is direct or indirect access. This change is upward compatible.

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Now You See It, Now Your Don't - by A. B. Hastings

I would like to suggest several changes in secure parameter entry for interactive users. Currently, the system blacks out an area for the secure parameter, prints a question mark, and waits for input. As the user types, each character is echoed in the blacked-out area. After the user enters a carriage return, the system prints a line feed. I would like to change this as follows:

1) The blacked-out area should be printed beginning in column one. No blanks are printed to leave space for the question mark.

2) No question mark is printed.

3) If the terminal is in full duplex mode, the echo is turned off while the secure parameter is entered.

4) After the user enters a carriage return, a line of X's is printed over the password (for CRT terminals).

5) A line feed is printed.

6) If the terminal was initially in full duplex mode, the echo is restored.

To implement these changes, I would like to add:

a) A TLX function which will set or clear full duplex. (This involves changes to TELEX, COMSREM, and TLX.)

b) Two control bytes in lTD called "PI" (prevent input prompt) and "PL" (prevent line feed). (This involves changes to TLX, TELEX, COMSTCM, and lTD.)

In addition, programs which allow secure entry of parameters (ACCFAM, CHARGE, PFILES, SEND, SUBMIT, etc.) would be changed to call a common deck called COMCESP (enter secure parameter). To assist in calling this common deck, a PROMPT macro would be defined in COMSTCM. COMCESP is already being used in ROUTE: modifications to COMCESP to take advantage of points a) and b) are relatively simple.

DISUCSSION TOPICS

More Xerox Queue Considerations - by W. C. Wells

Consider the following:

STOCK CDC	UCC
CONVERT(P=OUTPUT,N=OLD,64,R)	
FCOPY(N=OUTPUT,R)	
ROUTE(OUTPUT,DC=LP,EC=A9)	ROUTE(OUTPUT,DC=LP,EC=A9)

Under the stock system, the routing of ASCII print files must be preceeded by 2 control cards; the first to convert to the 64 character set and the second, to convert to 12 bit ASCII. A local modification has allowed the user to forget the conversion control cards and simply use the route statement. The extra system overhead required to convert ASCII is done in 1CD.

The proposals for the XEROX queue mechanism tend to move the character set mapping into another control card. The need for an additional control card for the XEROX is apparent when non-default print options are desired, but I do not feel it is necessary if one is just using the defaults (which hopefully will be similiar to the existing line printer).

My reasons are several. One reason I hear for mapping characters via a control card is to be able to charge the user for the transformation. Yet, UCC has moved away from that as shown in the above example. In general, UCC has moved toward using one route statement to route all files (in fact, in R6, all routing, including job submits, must go through DSP). Thus, a user should be able to route his file to the XEROX by just using the ROUTE card.

This ability in my view, is similiar to the ability to route to a 1004 or UT2000. Both of these require character conversion yet it is invisible to the user and it is done at our expense.

But what about the special options? If the user wishes to use the special options, he should be able to specify them in an additional control card much like the preprocessing of UNPAGE. But the general user shouldn't need to worry about the options.

There are several other advantages to putting the character translation in the XEROX dump routine (in addition to the consistency). First, it allows the addition of other printers without requiring a host of other programs should these also require character conversion. (Imagine requiring the user to do character conversion to route to a 1004 or UT200).

Second, it allows the switching of print files should the normal printers fail for some reason (hence my reason to have the defaults look like a printer). It also allows the ability to phase in page printers should that, in the future, prove desirable.

Third, character translation can be done quickly. A MECC developed routine can translate 7600 lines (the CONTROL writeup) in under 5 CPU seconds on the Cyber 73 at MECC (this is to packed 8 bit ASCII, 7 1/2 characters per word).

Fourth, if charging is desired, a page setup charge could be issued from the XEROX dump routine. We already charge for lines printed after the job terminates.

As a result it is my opinion that routing should be done by ROUTE, with character set translation being done after the route (by the XEROX dump queue routine) and that the setting of print options and text reformatting be done elsewhere. If one can change the print characteristics mid-point, this should be done via carriage control characters similiar to the "V" character (and others). Charging for the character mapping, if desired, can be done via another day file message.

SYSTEM MAINTENANCE: People and Procedures

Last Week's Systems Group Meeting - by T. W. Lanzatella

The following proposals were discussed.

1) Marisa's proposal to restructure SYSLIB was approved (see DSN 7,6 P. 30). The change will occur at the end of spring quarter.

2) Marisa's proposal to install REDACT, a replacement for UPWRITE, was approved (see DSN 7,6 P. 30).

3) Mike Frisch's proposal to install ROUTEX, a utility which reformats and translates print files for a Xerox 9700, was rejected after a lengthy discussion (see DSN 7,6 P. 31). Principle objections were:

   a) The command has too many options. Many of the options should instead be input directives. Most people felt that a typical ROUTEX command would span two cards.

   b) The function of routing the file to the queue should be separated from the reformatting function.

We recommended that the design be reconsidered with an eye toward the objections raised and with some concern for uniformity accross all computers (the VAX in particular). We also recommended that before a second proposal is published in the DSN, at least an informal concensus should be reached among staff that the approach is fruitful.

Jeff Drummond's discussion topic related to system naming conventions led (miraculously) to a speedy concensus. We agreed that Jeff should present a proposal to name each system after a planet.

Larry Liddiard announced the bids for a Class VI computer were opened on Wednesday, 25 March. Only one manufacturer submitted a bid and that was Cray. Assuming that our proposal is not rejected by the Computer Advisory Board or by the Regents, we will proceed with a Cray purchase.

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Callprg and Library Tape News - by M. Riviere

On April 14, I will install REDACT on the Library Tape as the official Writeup index editor. To complement the installation of REDACT, I will replace the UPWRITE entry on the Callprg index with a new entry which issues a message warning of the change. Modifications to the Writeup index until that date should continue being done with UPWRITE.

The next set of Callprg index and Library Tape changes will be taking place on April 28. Modifications for that date should be submitted before noon on April 16.

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Emergency Sysnotes - by T. W. Lanzatella

Sysnotes are those concise, newsworthy tidbits of information which occassionally appear on your banner page. Generally, they are used only to inform the user community of important things like permanent file disasters or changes in the hours of operations. Until recently, sysnotes were installed only through the most archaic of methods - a card deck. In order to put up a message, you punched the text on cards and sent them to me. I usually edit the cards and then run the job.

This method works well for me for two reasons:

1) I retain editorial control over the contents of the sysnote.

2) The sysnote can only be 27 lines long. Some subjective judgement is required when someone wants to put in a message and there is no space. The least important message is removed, not necessarily the oldest.

Ever since we began this procedure for installing sysnotes, we have needed a speedy method for putting up an emergency notification when I am not available. Paul Thompson recently completed a program and system procedure which can be used for this purpose.

A person wishing to put up a sysnote places the text on a permanent file called NEWNOTE, on pack SPL and then instructs the operator to enter X.SYSNOTE(U), where U is the user number or user index where NEWNOTE is stored. The file NEWNOTE will be checked by the procedure SYSNOTE to make sure that:

1) no data exists in column 1,
2) no data exists beyond column 70,
3) the total length of the sysnote does not exceed 27 lines.

If any of these conditions are not met, the procedure is aborted and the operator is informed of what went wrong and to tell the staff member.

The contents of the file NEWNOTE replace the contents of sysnote. Therefore, NEWNOTE should include the SYSTEM NOTES header. If the user intends to have some or all of the current sysnote included in the new version, the new message must be incorporated into the current sysnote and placed on file NEWNOTE. The current sysnote is always kept on a public file named NOTE on UN=WRITEUP, PN=SPL.

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Cyber 74/172 Deadstart Dump Analysis from Thursday, 19 March to Tuesday, 31 March - by J. J. Drummond

Wednesday, 25 March — Cyber 172

07:55 — N.A.
The system came up late due to a FCO installation overrun. No dump was taken.

15:15 — Cyber 74
1DU hung while operators were trying "to change equipment status on a print job". System continued to run o.k. and no deadstart was required.

Friday, 27 March — Cyber 172

09:27 — DD2006
The scopes blanked and a level three recovery was unsuccessful. A level zero deadstart was eventually required along with a level zero deadstart and preset on the Cyber 74. An analysis of the dump revealed the now-infamous mode 40 problem that was common on the Cyber 720 a few months ago. This is a hardware error of unknown origin.

Sunday, 29 March — Cyber 172

16:45 — N.A.
A disk drive failed requiring a level zero deadstart with the pack on another drive.

Tuesday, 31 March — Cyber 172

07:58 — N.A.
Pack UCC was destroyed by the CE's and the operators were unable to initialize it at deadstart. Finally, they brought the system up without it. No dump was taken.

14:22 — N.A.
A disk drive failed and the operators attempted to reload the data to another drive. Six hours later the system was again up for production. A problem in PFLOAD caused the delay (a fix was located in code for a future release). No dump was taken.

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MERITSS (Cyber 720) Deadstart Dump Analysis from 3/8 to 3/31 - by B. E. Blasing

Wednesday 3/18, 07:30 — No Dump
The operators were unable to deadstart in the morning. Analysis disclosed that the ECS coupler had been broken by an FCO installation. MERITSS was brought up without ECS.

Wednesday 3/18, 10:31 No Dump
MERITSS was brought down to install the DDP only version of TRANSIT after the DDP was hooked to a channel.

Wednesday 3/25, 07:47 No Dump
The scopes went blank after all of ECS was overwritten by an ECS test that the CE's were running on the 172.

Friday 3/27, 07:20 No Dump
DN41 began making a whining sound which somehow caused the system to checkpoint. It is not clear how this happened.

Friday 3/27, 09:25 No Dump!
DN40 tripped its circuit breaker and powered down. An unsuccessful level 3 and a successful level 0 deadstart were performed to bring the system back up. It is not clear why a deadstart was needed at all.

Sunday 3/29, 16:40 No Dump
MERITSS was brought down momentarily to take our temp. file device (PN=WIZARD) out of the system so that it could be used to replace a broken device on the 172.

Monday 3/30, 14:47 No Dump
A suspected ECS problem caused the field length of CSU (a maintenance program), TRANSIT, and two user programs to be corrupted. They subsequently got mode errors. The system did not go down. The problem has not reoccurred. No errors were recorded in the error log.